

**Title: The Development of a 20-year Database of Ocean Surface and Near-Surface Properties Suitable for Climate Analyses**

**Investigator(s): Judith Curry (PI)**

**Institution: Georgia Institute of Technology**

**Background**

This project supports the international SEAFLUX project to develop a climatic data record of global ocean surface latent heat fluxes from satellite observations. Based upon previous collaborative research with Carol Anne Clayson (Florida State University), surface and near-surface parameters of wind speed, temperature, and humidity have been derived from a combination of satellite observations, with a focus on the use of these variables towards determination of the air-sea turbulent heat fluxes. The goal is the production of a long-term (20 year) set of surface and near-surface parameters leading to fluxes with consistent, homogeneous errors that have been subjected to a rigorous error analysis. We will develop, using information gained from the SeaFlux Intercomparison Project, a 20-year time series (1987 – 2007) of sea surface temperature and 10-m temperature, wind speed, and specific humidity at a 3-hourly, 0.25° resolution over the global oceans. The specific objective of this project is to develop the XSEAFLUX product for the period 1998-2010 that focuses on the extreme conditions associated with tropical cyclones and also with high latitude storms. We are assembling an extensive data set of in situ flux measurements in the Southern Ocean obtained from Chinese ships, and also data from the polar regions during the International Polar Year. We will also develop and evaluate a data set of ocean surface latent fluxes in North Atlantic hurricanes, that integrates the satellite observations and aircraft reconnaissance data. Diagnostic studies will be conducted to interpret the fluxes in polar storms and North Atlantic hurricanes.